

IN THE CLAIMS

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A rotary engine for use with compressible fluids, the engine comprising:

a first rotation element mounted to rotate about a first axis;

a casing having a surface enclosing at least a part of the first rotation element, an elongate cavity of varying cross sectional area being defined between a surface of the first rotation element and the casing surface; and

a plurality of second rotation elements mounted to rotate about respective different second axes, each second rotation element being mounted to project through a slot in the casing surface and to cooperate with the first rotation element surface so as to divide the cavity into adjacent working portions,

wherein each second rotation element comprises a plurality of projecting portions having respective different radii about the second axis, the different radii causing the projecting portions to project into the cavity by respective different amounts, so that the volumes of the working portions vary as the first and second rotation elements rotate,

wherein, ~~in use, fluids~~ during a cycle of an engine operation, fluid in a working portion undergoes compression, combustion and expansion as a closed volume, the closed volume being defined during the compression, combustion and expansion by an adjacent pair of second rotation elements.

2. (Original) The engine of claim 1, wherein each projecting portion of a second rotation element spans an angle about the respective second axis, the radius of the projecting portion constantly varying about the axis.

3. (Original) The engine of claim 1, wherein each projecting portion of a second rotation element spans an angle about the respective second axis, the radius of the projecting portion stepping about the axis.
4. (Original) The engine of claim 3, wherein a number of the projecting portions of each second rotation element only partially project through a respective slot at any time during rotation of the first and second rotation elements.
5. (Original) The engine of claim 4, wherein a maximum angle spanned by a slot about a respective second axis is smaller than the angle spanned by a number of the projecting portions of each second rotation element.
6. (Original) The engine of any one of the preceding claims, wherein the first rotation element surface is a cylindrical surface.
7. (Original) The engine of claim 6, wherein the first rotation element is internal to the casing surface and the second rotation elements are external to the casing surface.
8. (Original) The engine of claim 6, wherein the first rotation element is external to the casing surface and the plurality of second rotation elements are internal to the casing surface.
9. (Previously presented) The engine of claim 1, wherein the first rotation surface is an end surface.
10. (Previously presented) The engine of claim 1, further comprising ignition means for ignition of a compressed fluid prior to expansion.
11. – 16. (Cancelled)

17. (Previously presented) The engine of claim 1, wherein the second rotation elements are distributed about the first rotation element, each second rotation element being mounted to rotate about a respective second axis that is perpendicular to the first axis.
18. (Previously presented) The engine of claim 1, wherein the first rotation element surface and the casing surface further define a seal between working portions of the cavity.
19. (Cancelled)
20. (Currently Amended) The engine of claim 1, wherein, ~~in use fluids,~~ during a cycle of an engine operation, fluid in a working portion undergoes the compression, combustion and expansion within one rotation of the first rotation element.